

***Scyllarus rapanus*, a new species of locust lobster
from the South Pacific
(Crustacea, Decapoda, Scyllaridae)**

by L. B. HOLTHUIS

Abstract. — Description of *Scyllarus rapanus*, a new species of Scyllaridae, known only from Rapa Island, Tubuai Archipelago, and closely related to *Scyllarus aurora*, a widely distributed species in the Pacific.

Résumé. — Description de *Scyllarus rapanus*, nouvelle espèce de Scyllare de l'île Rapa (îles Australes), Tubuai, très proche de *Scyllarus aurora*, espèce très répandue dans le Pacifique.

L. B. HOLTHUIS, Nationaal Natuurhistorisch Museum, Leiden, The Netherlands.

Through the kindness of Alain CROSNIER of the Muséum national d'Histoire naturelle of Paris, I received an interesting specimen of *Scyllarus* from the island of Rapa, the southern most island of the Tubuai Archipelago and situated in a very isolated position, being more than 600 km away from the nearest island.

This specimen was collected during one of the radiobiologic surveys carried out in French Polynesia by the Service Mixte de Contrôle Biologique de l'Armée (S.M.C.B.) on board the vessel "Marara" under the leadership of Joseph POUPIN. It shows a remarkable resemblance to *Scyllarus aurora* Holthuis, 1981, which is widely distributed throughout the Pacific (from Japan and Hawaii to the Tuamotu Islands) and at first sight would be taken for that species. Dr POUPIN however pointed out a number of differences between the Rapa specimen and *S. aurora*.

I found these characters constant in the entire material of *S. aurora* seen by me and had to come to the conclusion that the differences between the two forms are of a specific nature, the single specimen from Rapa being a well developed perfectly normal adult male. No other Scyllarid was collected at Rapa.

***Scyllarus rapanus* sp. nov.**

TYPE MATERIAL. — Rapa Island, Tubuai Archipelago, French Polynesia, 27°36'0"S/144°16'0"W, depth 250-300 m, collected in fish trap, 26 August 1988, leg. J. POUPIN, SMCB Sta. 101 : 1 ♂, carapace length 27.2 mm (MNHN-Pa 1394).



FIG. 1. — *Scyllarus rapanus* sp. nov., male holotype (MNHN-Pa 1394).

DESCRIPTION

The rostrum is blunt and slightly constricted behind the top. It bears a very strong and sharp rostral tooth. The pregastric tooth is completely absent. The gastric tooth is large and reaches beyond the middle of the distance between the tip of the rostral tooth and the cervical groove; it is high and ends in a sharp point. On its dorsal surface there are about 8 transverse rows of 1 to 7 squamae. The cardiac tooth is represented by two distinct rather blunt teeth, that in the median region of the carapace lie side by side behind the cervical groove; they are much smaller than the gastric tooth. The median area of the carapace between these cardiac teeth and the posterior groove of the carapace, shows 5 pairs of large squamae, those of the anterior pairs are more or less distinctly fused. The anterior submedian carina consists of a curved row of six rounded squamae, the posterior of which are double or treble. No tubercles are present between the anterior submedian and the anterior branchial ridges; the carapace there is, like in all areas between the squamae, covered with short dark hairs. The posterior submedian ridge has about 10 rounded squamiform tubercles which merge with the posteromedian squamiform area. Between the posterior submedian and the posterior branchial ridges there is a longitudinal row of 5 or 6 small rounded tubercles that are isolated and do not touch each other; this row extends over the full length of the area between the two ridges. The anterior and posterior branchial ridges are separated by a deep gap formed by the cervical groove; no tubercle is placed in this gap. The anterior branchial carina ends anteriorly in two large sharply pointed teeth that are placed on the inner orbital margin. The branchial ridge behind the posterior of these teeth is distinct and shows a faint indication of a squamiform sculpturation. Between this ridge and the posterior orbital margin, a more clearly squamiform ridge branches off from the branchial ridge and ends in a group of small squamae. The posterior branchial ridge ends anteriorly in a large, sharply pointed tooth, which overhangs the gap between the anterior and posterior ridges. Behind this tooth is a row of 6 or 7 broad distinct squamae. A longitudinal row of 7 or 8 rounded flat tubercles is placed directly against the outer margin of the posterior branchial squamae; the last of these tubercles are double or treble. Medial to the anterior tooth of the posterior branchial ridge is an oval to rounded slightly elevated area with a few flat squamae. The lateral margin of the carapace is divided by two grooves into three parts, each of which ends in a sharp spinous tooth, the first being the anterolateral tooth of the carapace, which is sharply pointed. On the anterior margin of the carapace, at the orbital margin, a much smaller but quite sharp spine is present. The anterolateral margin of the carapace behind the anterolateral tooth shows some four faint squamae. The mediolateral margin is the shortest of the three parts of the lateral margin and bears three or four transverse rows of one to three distinct squamae. The posterolateral margin is the longest of the three parts, and behind the anterior tooth shows a longitudinal row of about 8 squamiform broad and flat tubercles; below this margin there are some scattered squamiform tubercles. The lower lateral margin of the carapace is rather broad and flat and shows in the posterior part some small tubercles. The intercervical ridge is irregularly rounded in outline and shows traces of some squamae. The posterior groove of the carapace is straight, very distinct and deep. It is filled with hairs similar to those on the dorsal surface of the carapace. Before the posterior groove there are distinct squamae arranged in two transverse rows; the squamae of the anterior row are fewer (about 14) than those of the posterior row,

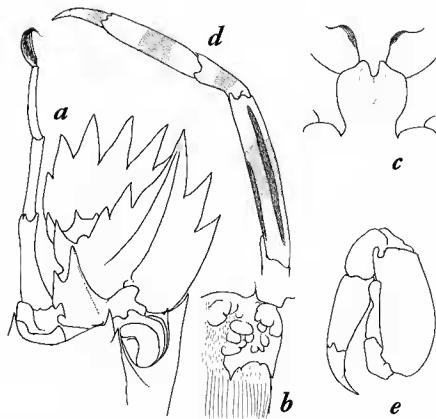


FIG. 2. — *Scyllarus rapanus* sp. nov., male holotype : a, anterolateral part of body in dorsal view; b, anterolateral part of telson in dorsal view; c, anterior part of thoracic sternum; d, first pereopod; e, third pereopod. a, b, d, e : $\times 3$; c : $\times 6$.

which has them more numerous (about 20) and smaller. The posterior margin itself shows a rounded median incision. Between the posterior groove and the posterior margin there is a second, much shallower and irregular groove; before this second groove is a transverse row of about 15 flat squamiform tubercles; behind the groove the surface is flat but there are several indistinct notches in the posterior margin of the groove.

The first abdominal somite shows a distinct, complete transverse groove over the middle. Before this groove the surface is smooth, behind it there are 22 short longitudinal grooves, which are not branched and do not reach the posterior margin of the somite. The pleura of the first somite are bilobed. The posterior margin of somites 1 to 4 show a small median incision, which is most distinct in somite 2 and least in somite 4. The abdominal somites show no median carina, although they may be slightly elevated in the middle. The anterior part of the somites, that disappears under the previous somites when the abdomen is fully stretched, is perfectly smooth. The posterior half of the somites is elevated and somewhat rounded. In somites 2 to 6 they show an arborescent marking, caused by a rather irregular narrow

transverse groove over the middle with anterior and posterior side branches. The left and right transverse groove end medially in a lobulated figure. The pleura of somite 3 have two short arborescent grooves. In somites 2, 4 and 5 the pleura have a single such groove. The pleura of somite 2 and 3 end in a sharp posteriorly directed point, that of somite 4 is less sharp and directed more down- and less backward. The pleura of somite 5 end in a bluntly triangular top. The sixth abdominal somite shows the usual lobulated pattern of grooves; at either end of the posterior margin a blunt tooth is present.

The calcified part of the telson ends in four sharp posteriorly directed teeth, two on either side. The margin between each pair of teeth shows two smaller and blunter teeth, which are absent in *Scyllarus aurora*.

The anterior margin of the antennular somite is incised in the middle and shows a blunt tooth at either side. The antennula is similar to that of *S. aurora*.

The sixth segment of the antenna ends in 5 teeth, which taper regularly from the base to the tip and end in a sharp apex; an appressed rather sharp tooth is visible on the inner margin of this segment. The upper surface of the fifth segment of the antenna has three teeth on the anterior margin, the inner being distinctly the largest, the outer is the smallest and bluntest; the lower part of the anterior margin has a single large tooth. The fourth antennal segment shows a single oblique dorsal carina that ends in the apical tooth, no other carinae or tubercles are present on the upper surface of the segment; its outer margin has two large triangular sharply pointed teeth; the anterior margin shows a large sharply pointed tooth at the inner angle, while between the articulation with the fifth segment and the top of the fourth the anterior margin shows two equally large pointed teeth in the inner half, the outer half being unarmed. In *S. aurora* the inner of these two teeth is reduced to a little lobe and is much smaller than the large outer tooth, which in the two species is of similar size. The outer of the two teeth on the anterior margin of the third segment is about twice as long as the inner, both are conical and sharply pointed. In *S. aurora* these teeth are wider and more flattened, while the outer is only slightly longer than the inner. Part of this third segment forms the anterior margin of the orbit.

The anterior margin of the epistome is shallowly V-shaped with a narrow median incision.

The first pereopod is shorter and more robust than the following. The dactylus is about 2/3 the length of the propodus, it is slightly curved and tapers to a horn-coloured tip. The propodus widens toward the base. The carpus is slightly longer than the dactylus and narrows basally. The merus is as long as the carpus and propodus combined, being about 1.5 times as long as wide. The propodus has the surface smooth and rounded, without grooves. The merus has a deep and wide ventral groove for the reception of the distal part of the leg, when that is folded; the dorsal margin of the merus is bluntly crested. The left second leg is missing, the right is incomplete, lacking propodus and dactylus. The merus of this leg is slightly longer and wider than that of the third leg and is more strongly curved; on the outer surface it bears a longitudinal groove just below the upper margin and extending over practically the full length of the segment; a second similar groove is present in the lower half of the merus, it is much shorter and runs parallel to and slightly above the basal part of the lower margin. In the third leg the merus is straighter. It shows a similar dorsal groove on the outer surface as the second leg. The lower groove extends over slightly more than the basal half of the segment. The merus is about as long as the carpus and propodus together. The propodus measures about 1.5 times the length of the carpus. The dactylus is slightly shorter than the carpus. Both the dactylus and

carpus are naked and show no grooves. The propodus shows traces of the lower groove in the proximal part of the outer surface, and a line of very short hairs extends over the greater proximal part of the dorsal margin and continues on the distal third of the upper margin of the carpus. Legs 4 and 5 are shorter and distinctly narrower than the third. The merus of the fourth leg has the same hairy grooves as that of the third, but the carpus and propodus are naked and without grooves; the propodus is slightly more than twice as long as the dactylus. The fifth leg is slightly narrower than the fourth; the merus is about as long as the propodus and dactylus together, and shows only the upper hairy groove on the outer surface. The other segments are naked. The propodus is somewhat less than three times as long as the dactylus. The carpus is slightly longer than the dactylus and the merus is about as long as the propodus.

The sternum shows a deep and wide U-shaped incision in the middle of the anterior margin; this incision is continued posteriorly as a closed median groove. The two halves of the anterior margin at either side of the median incision slope obliquely backward; the anterolateral angles of the sternum form a blunt angle and have the top widely rounded. The sternites are separated by deep grooves and those of the second and fifth legs show a transverse carina, the one of the second being very short. An inconspicuous median tubercle is placed on the sternite of the fifth leg. The fifth sternite of this male specimen has a sharp, spine-like, posteriorly directed tooth at either end; a small blunt lobe is placed behind the base of the fifth leg slightly laterally of this tooth.

In this male specimen there are no pleopods on the first abdominal somite, but in those of the second somite the endopod is about as long as the exopod; both endopod and exopod are oval distally and end in a sharp long and narrow tooth-like tip. In pleopods 3 to 5 the endopod is reduced to a small lobe, the exopod is blade-shaped and only slightly shorter than that of the second somite.

Colour : A colour photograph taken of a live specimen shows a dark brownish red animal. The red in some places (e.g., on part of the antennae, and on parts of the carapace) is lighter than in others. The distal articulations of the antennula are purple. Each half of the carapace shows two pale rounded spots before the posterior margin. A small pale spot is present in the lateral parts of the first and second abdominal somites, while the smooth anterior part of the second somite shows a pair of small submedian pale spots. The last four pereopods are whitish with a broad red band in the proximal part or the middle of merus and propodus, while there is a narrow band of that colour on the carpus. The alcohol specimen is very pale with the carapace mottled with pink. The teeth of the carapace and the antennae are pink, while the abdominal somites have a broad pink band along the posterior margin. Also the bands of the legs are pink.

REMARKS

The species is very close to *Scyllarus aurora*, but differs in a number of characters that are constant in the large material of the latter species that could be examined. The body of *S. rapanus* is somewhat more slender than that of *S. aurora*, and has the carapace more strongly narrowed posteriorly. The margin between each pair of teeth at the end of the calcified part of the telson in *S. rapanus* shows one or two distinct denticles, which are absent or extremely faint

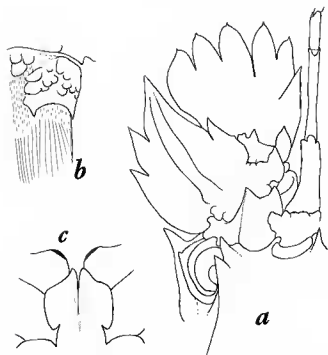


FIG. 3. — *Scyllarus aurora* Holthuis, 1981, male paratype from off Haleiwa, Oahu, Hawaiian Islands (no. RMNH 33524): a, anterolateral part of body in dorsal view; b, anterolateral part of telson in dorsal view; c, anterior part of thoracic sternum. a, b : $\times 3$; c : $\times 6$.

in *S. aurora*. The teeth of the last (= 6th) segment of the antenna in the new species are elongate triangular and perfectly regularly taper to the sharp apex, the lateral margins being straight; in *S. aurora* these teeth in the basal part are gradually narrowing very slightly, to suddenly contract at the end to a small tooth-like tip, thereby the lateral margin of these teeth is convex especially in the distal part. In the fourth antennular segment, the anterior margin outside the articulation with the fifth segment shows two teeth of similar size in *S. rapanus*; in *S. aurora* there is only one tooth there, the second is absent or reduced to a more denticle. One of the most salient differences is shown by the third segment of the antenna, which shows two teeth on its anterior margin: in *S. rapanus* the outer of these two teeth is about twice as long as the inner, while in *S. aurora* they are of about the same size. The median incision of the anterior margin of the thoracic sternum is rounded at the base in *S. rapanus* and more V-shaped in *S. aurora*.

Acknowledgements

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